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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/671,469	09/29/2003	Takashi Wakutsu	243326US2RD	7963

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OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C.
1940 DUKE STREET
ALEXANDRIA, VA 22314

EXAMINER	
BALAOING, ARIEL A	

ART UNIT	PAPER NUMBER
2683	

DATE MAILED: 02/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/671,469	WAKUTSU ET AL.	
	Examiner	Art Unit	
	Ariel Balaoing	2683	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 November 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) *14-20* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-13* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *29 September 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election of Group I (claims 1-13) in the reply filed on 11/25/2005 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

2. Claims 14-20 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected Group, there being no allowable generic or linking claim.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-9, 11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Consider claims 1, 4, 7, 8, and 11 the phrase "cellular-type" renders the claims indefinite because the addition of the word "type" to an otherwise definite expression (e.g., cellular provider or terminal) extends the scope of the expression so as to render it indefinite (*Ex parte Copenhaver*, 109 USPQ 118 (Bd. App. 1955)). See MPEP § 2173.05(b).

5. Claim 8 recites the limitation "said software wireless terminal" in line 2 of the claim. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 1-11, 13 rejected under 35 U.S.C. 103(a) as being unpatentable over INOUE et al (US 6,580,921 B1) in view of MITSUGI et al (US 2002/0137514 A1).

Regarding claim 1, INOUE discloses a wireless communication terminal (abstract), comprising: a first wireless unit (**2**) which transfers a wireless signal, a first controller (column 2:line 54-column 3:line 34; Figures 1, 4, 5); a cellular type wireless equipment (**8, 8a, 8b**) having a second wireless unit which transfers a wireless signal by a cellular method, and a second controller (**10, 10a, 10b**) which controls said second wireless unit (column 2:line 54-column 3:line 34; Figures 1, 4, 5); and a control signal line which transfers a control signal necessary for establishment of communication between said first and second controllers (column 2:line 54-column 3:line 34; Figures 1, 4, 5). However, INOUE does not disclose wherein the first wireless unit is a software defined radio which transfers a wireless signal, a signal processor including a reconfigurable unit being able to change signal processing contents of the wireless signal transferred by said first wireless unit a signal processing controller which controls reconfiguration of the signal processing contents for said reconfigurable unit, and wherein a first controller which controls said signal processor and said signal processing controller. MITSUGI discloses wherein the first wireless unit is a software defined radio which transfers a wireless signal (Figure 4), a signal processor including a reconfigurable unit (**14**) being able to change signal processing contents of the wireless signal transferred by said first wireless unit (paragraph 93) a signal processing controller which controls reconfiguration of the signal processing contents for said reconfigurable unit (**12c**), and wherein a first controller which controls said signal processor and said

signal processing controller (**12, 12a**). Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify INOUE to include the software defined module as taught by MITSUGI, as both relate to determination of wireless capabilities and handover of mobile resources. This is beneficial in that handover options can be expanded without losing the abilities of using the previous communication system.

Regarding claim 2, see the rejections of the parent claim concerning the subject matter this claim is dependent upon. INOUE further discloses wherein said control signal line transfers said control signal indicating that said cellular type wireless unit has taken restriction of transmission, from said second controller to said first controller (column 2:line 54-column 3:line 34).

Regarding claim 3, see the rejections of the parent claim concerning the subject matter this claim is dependent upon. INOUE further discloses wherein said control signal includes at least one of information relating to a wireless channel structure, information relating to carrier configuration for control, system operational information, congestion restriction information, country code information, wireless system type information, general calling area type information, channel re-establishment request information, channel allocation notification, and channel allocation (column 2:line 54-column 3:line 34).

Regarding claim 4, INOUE discloses a wireless communication terminal (abstract), comprising: a first wireless unit (**2**) which transfers a wireless signal; a first controller (column 2:line 54-column 3:line 34; Figures 1, 4, 5); a second wireless unit (**8,**

8a, 8b) which transfers a wireless signal by a cellular method, and a second controller (**10, 10a, 10b**) which controls said second wireless unit (column 2:line 54-column 3:line 34; Figures 1, 4, 5); and a control signal line which transfers a control signal necessary for establishment of communication between said first and second controllers (column 2:line 54-column 3:line 34; Figures 1, 4, 5). However, INOUE does not disclose wherein the first wireless unit is a software defined radio which transfers a wireless signal, a signal processor including a reconfigurable unit being able to change signal processing contents of the wireless signal transferred by said first wireless unit a signal processing controller which controls reconfiguration of the signal processing contents for said reconfigurable unit, and wherein a first controller which controls said signal processor and said signal processing controller. MITSUGI discloses wherein the first wireless unit is a software defined radio which transfers a wireless signal (Figure 4), a signal processor including a reconfigurable unit (**14**) being able to change signal processing contents of the wireless signal transferred by said first wireless unit (paragraph 93) a signal processing controller which controls reconfiguration of the signal processing contents for said reconfigurable unit (**12c**), and wherein a first controller which controls said signal processor and said signal processing controller (**12, 12a**). Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify INOUE to include the software defined module as taught by MITSUGI, as both relate to determination of wireless capabilities and handover of mobile resources. This is beneficial in that handover options can be expanded without losing the abilities of using the previous communication system. Although MITSUGI discloses

the use of multiple cellular radio technologies in addition to using a first technology (column 7:line 55-column 8:line 20), MITSUGI does not disclose the second wireless unit comprises a software-defined radio. INOUE disclose the use of a software defined radio representing multiple technologies (paragraph 22-29). Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify MITSUGI to include a software defined radio as the second wireless unit, as this can reduce the size and power constraints of a mobile device.

Regarding claim 5, see the rejections of the parent claim concerning the subject matter this claim is dependent upon. INOUE further discloses wherein said control signal line transfers said control signal indicating that said cellular type wireless unit has taken restriction of transmission, from said second controller to said first controller (column 2:line 54-column 3:line 34).

Regarding claim 6, see the rejections of the parent claim concerning the subject matter this claim is dependent upon. INOUE further discloses wherein said control signal includes at least one of information relating to a wireless channel structure, information relating to carrier configuration for control, system operational information, congestion restriction information, country code information, wireless system type information, general calling area type information, channel re-establishment request information, channel allocation notification, and channel allocation (column 2:line 54-column 3:line 34).

Regarding claim 7, INOUE discloses a wireless communication terminal (abstract), comprising: a first wireless unit (**2**) which transfers a wireless signal, a first

controller (column 2:line 54-column 3:line 34; Figures 1, 4, 5); a cellular type wireless equipment (**8, 8a, 8b**) having a second wireless unit which transfers a wireless signal by a cellular method, and a second controller (**10, 10a, 10b**) which controls said second wireless unit (column 2:line 54-column 3:line 34; Figures 1, 4, 5); a simple wireless equipment having a third wireless unit (**8a, 8b**) which transfers the wireless signal in a range narrower than said cellular type wireless equipment, and a third controller (**10a, 10b**) which controls said third wireless unit (column 7:line 55-column 8:line 20; GSM operates around 1800 MHz, while PDC operates around 800 MHz); and a control signal line which transfers a control signal necessary for establishment of communication between said first, second, and third controllers (column 2:line 54-column 3:line 36; Figures 1, 4, 5). However, INOUE does not disclose wherein the first wireless unit is a software defined radio which transfers a wireless signal, a signal processor including a reconfigurable unit being able to change signal processing contents of the wireless signal transferred by said first wireless unit a signal processing controller which controls reconfiguration of the signal processing contents for said reconfigurable unit, and wherein a first controller which controls said signal processor and said signal processing controller. MITSUGI discloses wherein the first wireless unit is a software defined radio which transfers a wireless signal (Figure 4), a signal processor including a reconfigurable unit (**14**) being able to change signal processing contents of the wireless signal transferred by said first wireless unit (paragraph 93) a signal processing controller which controls reconfiguration of the signal processing contents for said reconfigurable unit (**12c**), and wherein a first controller which controls said signal processor and said

signal processing controller (**12, 12a**). Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify INOUE to include the software defined module as taught by MITSUGI, as both relate to determination of wireless capabilities and handover of mobile resources. This is beneficial in that handover options can be expanded without losing the abilities of using the previous communication system.

Regarding claim 8, see the rejections of the parent claim concerning the subject matter this claim is dependent upon. INOUE further discloses wherein said first wireless unit can operate as a cellular type wireless equipment (column 2:line 54-column 3:line 34); and said control signal line transfers said control signal indicating that said cellular type wireless unit has taken restriction of transmission, from said second controller to said first controller (column 2:line 54-column 3:line 34).

Regarding claim 9, see the rejections of the parent claim concerning the subject matter this claim is dependent upon. INOUE further discloses wherein said control signal includes at least one of information relating to a wireless channel structure, information relating to carrier configuration for control, system operational information, congestion restriction information, country code information, wireless system type information, general calling area type information, channel re-establishment request information, channel allocation notification, and channel allocation (column 2:line 54-column 3:line 34).

Regarding claim 10, INOUE discloses a wireless communication terminal (abstract), comprising: a first wireless unit (**2**) which transfers a wireless signal, a first

controller (column 2:line 54-column 3:line 34; Figures 1, 4, 5); a cellular type wireless equipment (**8, 8a, 8b**) having a second wireless unit which transfers a wireless signal by a cellular method, and a second controller (**10, 10a, 10b**) which controls said second wireless unit (column 2:line 54-column 3:line 34; Figures 1, 4, 5); and a control signal line which transfers a control signal necessary for establishment of communication between said first and second controllers (column 2:line 54-column 3:line 34; Figures 1, 4, 5). Also, from figures 4 and 5, **8a** and **8b** can be seen as the first and second wireless units. However, INOUE does not disclose wherein the first and wireless units are a software defined radio which transfers a wireless signal, a first and second signal processor including a first and second reconfigurable unit being able to change signal processing contents of the wireless signal transferred by said first and second wireless unit a first and second signal processing controller which controls reconfiguration of the first and second signal processing contents for said first and second reconfigurable unit, and wherein a first and second controller which controls said first and second signal processor and said first and second signal processing controller. MITSUGI discloses wherein a wireless unit is a software defined radio which transfers a wireless signal (Figure 4), a signal processor including a reconfigurable unit (**14**) being able to change signal processing contents of the wireless signal transferred by said wireless unit (paragraph 93) a signal processing controller which controls reconfiguration of the signal processing contents for said reconfigurable unit (**12c**), and wherein a controller which controls said signal processor and said signal processing controller (**12, 12a**). Therefore it would have been obvious to a person of ordinary skill in the art at the time

the invention was made to modify INOUE to include the software defined module as taught by MITSUGI, as both relate to determination of wireless capabilities and handover of mobile resources. This is beneficial in that handover options can be expanded without losing the abilities of using the previous communication system.

Regarding claim 11, see the rejections of the parent claim concerning the subject matter this claim is dependent upon. INOUE further discloses wherein said first wireless unit has a function of a cellular type wireless equipment which transfers a wireless signal by a cellular method (column 2:line 54-column 3:line 34); said second software defined radio has a function of a simple wireless equipment which transfers a wireless signal in a range narrower than the cellular method (column 7:line 55-column 8:line 20; GSM operates around 1800 MHz, while PDC operates around 800 MHz); and said control signal line transfers said control signal indicating that said cellular type wireless unit has taken restriction of transmission, from said second controller to said first controller (column 2:line 54-column 3:line 34).

Regarding claim 13, see the rejections of the parent claim concerning the subject matter this claim is dependent upon. INOUE further discloses wherein said control signal includes at least one of information relating to a wireless channel structure, information relating to carrier configuration for control, system operational information, congestion restriction information, country code information, wireless system type information, general calling area type information, channel re-establishment request information, channel allocation notification, and channel allocation (column 2:line 54-column 3:line 34).

10. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over INOUE et al (US 6,580,921 B1) in view of MITSUGI et al (US 2002/0137514 A1) as applied to claim 10 above, and further in view of MUROTAKE (US 2006/0015674 A1).

Regarding claim 12, INOUE discloses further comprising an interface circuit (**22, 22a, 22b, 24**) which transfers a signal including said control signal between said first and second software wireless terminals (column 7:lines 23-52); and wherein said second wireless unit is connected to said first wireless unit, and transfers signal processing contents between said first and second signal processors, via said interface circuit (column 7:lines 23-52). However, the combination of INOUE in view of MITSUGI does not disclose wherein the first and second units are connected in a detachable manner. MUROTAKE discloses wherein first and second wireless units are connected in a detachable manner (200-Figure 3; abstract; paragraph 53-59). Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the combination of INOUE in view of MITSUGI to provide a detachable connection to the wireless devices, as the wireless device can then be shared between communication units with similar connection interfaces.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

OSBORN et al (US 6,768,901 B1) – Dynamic hardware resource manager

FETTE et al (US 6,052,600) – Software programmable radio

YAMADA (US 6,400,962 B1) – Mobile terminal with selectable communication mode

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ariel Balaoing whose telephone number is (571) 272-7317. The examiner can normally be reached on Monday-Friday from 8:00 AM to 4:30 AM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Trost can be reached on (571) 272-7872. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ariel Balaoing
Art Unit 2683
Patent Examiner

AB

WILLIAM TROST
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600